

REMARKS

In the above-identified Office Action, the three pending claims were again rejected as being obvious in view of a combination of the disclosures of the cited Nakamura and Hiyama patents. However, by this response independent Claim 14 has been amended and new independent Claim 18 has been added, in order to stress the patentable distinctions of the invention over the prior art.

In particular, independent Claim 14 requires the specific method set forth therein and requires also that “no reset of the floating diffusion region is performed between the first and second transfer steps of the signal charges”. As referred in the Office Action, this claimed requirement appears to distinguish Claim 14 over the prior art.

In contrast to that requirement, according to Nakamura it appears from Fig. 4 thereof that a charge is transferred once as shown in Fig. 4B, and a different charge is transferred as shown in Fig. 4D. According to the present invention, as is apparent from Fig. 1C, the charge transferred in the second transfer is a remainder of the same charge which was transferred in the first transfer. Accordingly, even though no light is incident during a time period between the first and second transfers, for the purpose of suppressing the undesirable remainder of the accumulated charge, the second transfer is performed to sweep out the remaining charge. Moreover, according to Nakamura, at a state that the charge exists at a detection node 33 (charge-voltage conversion unit of the present invention), before reading out the signal into a signal line, a reset is performed. In contrast to that, according to present invention, after the first transferring, before the second transferring, no reset is performed. That has been made clear in amended Claim 14, and in new Claim 18.

As described above, it is respectfully submitted that the claims as now presented are patentable over the cited references, wherefore the issuance of a Notice of Allowance is solicited.

Applicants' undersigned attorney may be reached in our New York office by telephone at (212) 218-2100. All correspondence should continue to be directed to our address given below.

Respectfully submitted,

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